GENERAL LIBRARY
JUL 25 1919
UNIV. OF MICH.

1859 PUBLISHED WEEKLY 1919

AMERICAN GAS ENGINEERING JOURNAL

FORMERLY

AMERICAN GAS LIGHT JOURNAL

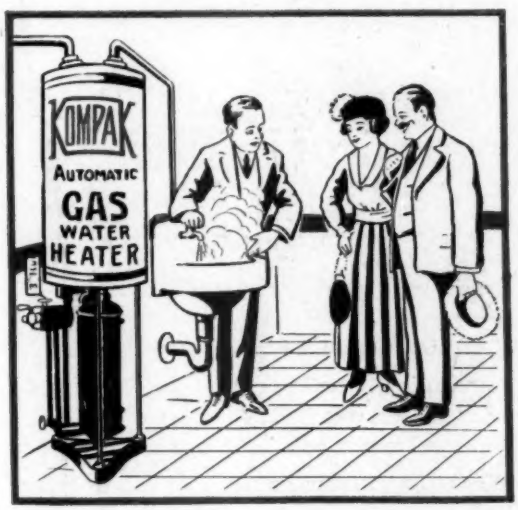
VOL. CXI., No. 3
WHOLE No. 3202

NEW YORK, SATURDAY, JULY 19, 1919

Subscription $3 per year
$4 Canada $5 Foreign

HOW BIG IS THE FLOW OF HOT WATER FROM AN AUTOMATIC WATER HEATER? HOW BIG IS IT IN SUMMER? HOW BIG IN WINTER?

NO EXPLANATION OR APOLOGY IS NECESSARY WHEN SELLING A KOMPAK AUTOMATIC WATER HEATER. THE FLOW OF HOT WATER IS ALWAYS AT FULL FAUCET CAPACITY. HOT WATER FAST AS THE COLD WATER FLOW, WINTER AND SUMMER.



Save-a-Meter
Save-a-Service

KOMPAK

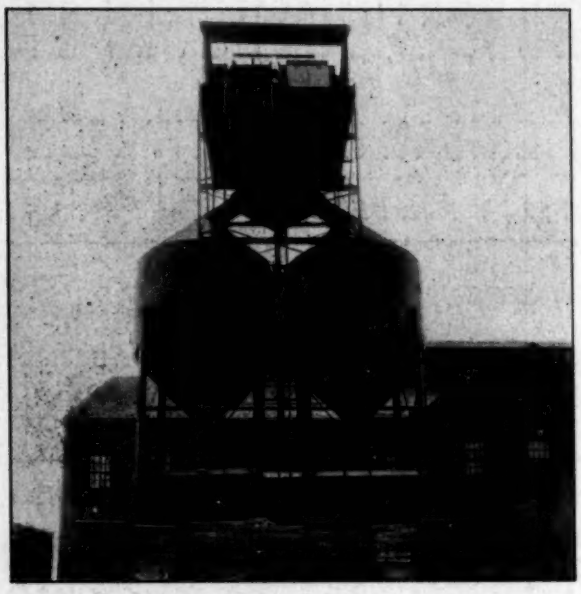
TRADE-MARK
REG. IN U.S. PAT. OFF.

Automatic
Water Heaters

THE LONG-LANDRETH-SCHNEIDER CO.
NEW BRUNSWICK NEW JERSEY

M-50

INDEX TO CONTENTS, PAGE 53 ADVERTISERS' INDEX, PAGE 24



Beaumont Double Skip Hoist; Boston Consolidated Gas Co.

Automatic Unloading and Storage of Coke

The illustration shows how a coke car, or a number of cars can be unloaded and the coke stored with no labor but to shift the cars.

Two balanced skip buckets are used; one goes up as the other goes down.

The entire operation is automatic, each bucket fills, hoists, dumps and returns as long as material is supplied.

Would you like us to figure on a similar proposition for your plant?

Our catalog No. 34 may help you to decide. Where shall we send it?

R. H. BEAUMONT CO.

364 Arch St., Philadelphia, Pa.

New York Cleveland Boston Chicago

Canada—The Canadian-Fairbanks-Morse Co.—Montreal

AMERICAN GAS ENGINEERING JOURNAL. July 19, 1919. Vol. CXI, No. 3. Published Weekly by American Gas Light Journal, Inc., New York, N. Y. Subscription Price $3 per Year; $4 Canada; $5 Foreign.
Entered as second-class matter January 9, 1917, at the post-office at New York, N. Y., under the Act of March 3, 1879.

American
Gas Engineering Journal

FORMERLY THE AMERICAN GAS LIGHT JOURNAL

Vol. CXI, No. 3 NEW YORK, JULY 19, 1919 Whole No. 3202

Publicity Useless Unless Utility Policy Is Progressive

Publicity Will Direct Attention of Consuming Public to Any Part of the Utility's Business, but Unless that Part Is Prepared to Carry Out the Promises Made, the Only Result Will Be to the Company's Detriment

By RALPH ELSMAN

Vice-President Kings County Lighting Company, Brooklyn, N. Y.

On the policy of any public utility company depends the amount of publicity that that company will receive from newspapers and other publications, for publicity is useless unless the policy of the company is progressive. Without an energetic, up-to-date, efficient management all of the publicity that could be secured would not be worth the paper it is printed on, for it would only react to the detriment of the company.

Publicity will direct attention of the consuming public to any part of the business, but unless that part is prepared to carry out the promises made then the work has not only been for nothing but in addition thereto actually will redound in such a way as to bring discredit upon the management. Publicity, according to my experience, is a power that can be wielded either for the benefit of, or the detriment of any proposition. Properly handled it becomes a power for good that is unlimited in its scope; improperly applied it will swing the pendulum back so quickly that the harm has been done before it can be realized.

Educational Publicity Can Make Even the Bitter Pill Endurable

Before entering into a campaign of publicity there are many questions that every company should determine so that there will be no let up until the desired objective has been attained. Probably every company does a certain amount of advertising either through the newspapers or window display or word of mouth, but usually this is in a desultory fashion and is not positive or instructive enough to be a factor. This power, once it is harnessed with a certain object in view, however, will act as a part of a good-will campaign that cannot help but be successful. The desire of the company to attain and hold the good will of its consuming public should not be an ethereal one but should be computed in hard dollars and cents, for it is a matter of simplifying the work of the company of explaining some of the problems and perhaps of shedding some light on the problem of rates that is constantly confronting us.

That a publicity campaign has a tremendous power was clearly demonstrated to all of us during the world war. Each one of the Liberty Loan issues was an example of a national publicity campaign, and that it was successful, as all well directed campaigns are bound to be, was shown by the oversubscriptions which followed each issue. Another example of this was the handling of the selective service draft when so many millions of men of the country voluntarily gave information regarding themselves which, it is probable, could never have been secured had not the campaign of educational publicity preceded the actual registration. When the time came for the registration, I venture to say, there could not have been more than one out of every hundred thousand persons who did not have an intelligent and clear grasp of just what the Government was seeking. The result was a smooth running, well oiled machine as contrasting to the draft riots that occurred during the Civil War. Here we have two complete examples of intelligent publicity properly applied. Now it is my contention that if this publicity had such a material and beneficial effect on the greatest crisis that has ever faced this country, then surely it will have just as great an effect on the problems that confront any public utility company, no matter what its trouble may be or the territory that it may serve.

Relation of Policy to Publicity

But, as aforesaid, without proper policy, publicity would be useless. Thus it becomes a problem of deciding on absolute frankness, of being willing to lay all of your cards on the table and then to trust to the spirit of fairness that is a noted American characteristic. Publicity will solve your labor problem, for if you have the right methods, if you take care of your employees, look out for their welfare, and this becomes known, then the

question of securing applicants for positions and of keeping the staff up has been simplified, for you will be overburdened with requests for positions and you will be in a position to pick each employee for his or her particular qualifications rather than to take anyone who may offer his or her services in order that the work may be gotten out in no matter what fashion. It does not require any explanation to show the value of this publicity in terms of dollars and cents for one of the problems of the day is the constant labor turnover which in hundreds of companies amounts to many hundreds of per cent each year. Reducing the expense of securing employees, reducing the expense of educating the employee once he or she has been secured is a matter of no little moment and one which cannot help but carry this appeal to the efficient executive of to-day.

One of the problems that every business man faces to-day is the fighting of Bolshevism, for no matter how much we agree that there is no such movement, it nevertheless, is a well organized propaganda that can be fought only with its own weapons, publicity. This bears such close relationship to the question of labor, it can be fought simultaneously with the education of the public and the securing of employees.

The Part of the Trained Publicity Man

An organization which is founded on a basis of happiness, of pleasant surroundings, of pleasant working conditions, is bound to radiate and reflect thase conditions in its contact with the public, and herein is the first step of securing consumer good will. Following this more or less passive attitude should come the first aggressive step in securing consumer good will, that of an active campaign carried on through the news columns of the newspaper published in the locality of the company. Herein lies the great value of the trained publicity expert, for stories, which have not been carefully prepared, which are not written in a straightforward and interesting manner, will go far wide of the mark intended with the result that wasted effort has been piled upon useless expenditures. The trained publicity man delving into the affairs of the company finds many things which he, through his experience, knows will prove interesting to the public and will help to clear up misunderstandings on the part of the consumer which perhaps have kept company and patrons apart. The trained publicity man will interweave with his news story the lesson that he is attempting to drive home, doing it much as a physician sugar-coats his bitter pills. There can be but one result and that one will benefit the company so materially and so effectively that only a short time after the campaign has been started, results will begin to show that will be surprising.

Parenthetically it might be well to remark that publicity has become an exact science. No longer is there any guesswork as to publishing a story and the effect on the public, but the effect can be definitely measured before the first step is taken.

To proceed, the constantly following up of articles with articles and the adherence to a definite constructive policy will wear away traditions that have come down through the dark ages of the utility business and will substitute in their places a clear conception of the problems that we are facing in our efforts to give efficient service at all times.

Policy and publicity go hand in hand and that company which has a well organized publicity department and whose policy is fair treatment of the consumer, cannot fail eventually to win its case if only through the power of public opinion.

Gas Engine Vibration

Vibratory effects in connection with the running of gas engines are apt to be attended with considerable difficulty in providing an effectual remedy. It may, of course, happen that upon investigation the cause or causes will be quickly apparent, but only to an expert. The real trouble is when, even to this individual, they are obscure, and what adds to the perplexing character of many instances of vibratory trouble is that such phenomena—for often this word more fittingly expresses it—may be in evidence only at intermittent periods.

In the case of large gas engines, housed in a building disconnected from any other, and running at a comparatively high rate of speed, vibrations might on occasion be induced from the rapid pulsation of air caused by the displacement of the trunk piston. Then it would be transmitted to the wall of the building and cause windows and doors, or perhaps anything hanging around the walls, to vibrate. If the vibration from this building is not transmitted to any other adjacent, much may be done towards minimizing the effects by bringing down from the roof a fairly large diameter air pipe, terminating centrally over the engine with a funnel-shaped mouth. A suitable revolving cowl should be fixed to the upper end in order to draw off the air within the room; or, what is more effective still, a propeller or fan, mechanically driven, might be employed. Windows and doors should be tight fitting, the latter closing against some soft, resilient material.

Vibrations might also be transmitted to a building direct from the engine foundations. A method often employed to prevent this is by interposing a thick layer of some absorbent material between the engine and the concrete foundation, some thing like thick door mats affording an excellent medium. In one instance of transmitted vibration recalled by the writer, wherein the unpleasant effects were conveyed to several buildings adjoining, one being an office, the only effectual remedy, after several others had been tried, was found in digging a deep trench around the concrete bed of the engine about a foot in width, then filling it hard with silicate of cotton; finally leveling off with a thin crust of concrete.

An unbalanced flywheel, if running at a high velocity will sometimes generate a certain quality of vibration which by earth contact might be transmitted to the walls of a building, or one adjoining. The writer has also known of a rather pronounced case of vibratory trouble to proceed from a loose flywheel—the key being a trifle slack in a lateral direction. As a rule, however, vibration arising from what might be termed mechanical defects possesses a quality which makes them less difficult to locate, and invariably an experienced ear can readily differentiate between vibration due to mechanical causes and that produced by others not so readily apparent.

In another case of vibratory trouble the engineer in charge was persistent in his opinion that a certain driving belt used in transmitting power from the engine to a centrifugal pump was responsible. On the other hand the writer was of the opinion that the pump itself was the vital cause; this opinion being somewhat strengthened by the fact that the engine, when running light at

(*Continued on page* 56.)

Way to Industrial Business More Often Found Through the Side Door Marked "Factory Entrance" than Through the Front Office Marked "Private"

Since the Man in the Shop in the Most Cases Is the Judge Who Will Determine Whether or Not Your Installation Will Come in Why Not See Him First?

By HARRY DOBRIN
Chattanooga Gas Company, Chattanooga, Tenn.

The way to industrial business is more often found through the side door marked "factory entrance" than through the front office marked "private." And the first interview is best had with the man in overalls, grimy with dust, than with the man at the glass-covered mahogany desk.

First find out the needs of your prospect before you approach him. Supposing you approach Mr. Manufacturer by asking him whether he is heat-treating his tools and dies by gas, he will not be as interested as when your conversation begins as follows:

"Mr. ———, in going through your plant I noticed a number of boxes and kegs full of broken and spoiled tools and dies, worth a fortune, all due to improper heat-treating."

He will be ready to do business with you without delay.

Of course, it takes years of practice and experience to see what the manufacturer needs, and to know how you can help him. That is the point that I want to emphasize.

How you can help him?

Your prospect does not care a snap about what he is to do for you. It is what you can do for him that he is interested in.

Adopt the Other Fellow's Point of View

The same fundamental principle that is at the base of all sales effort rules in selling industrial fuel, namely—you must adopt the other fellow's point of view.

How does he take it?

What questions does he ask himself as you talk to him?

I am sure if you could establish communion with his mind, the question uppermost there you would find to be: "What is there in it for me?"

The first interview is the most important. Be well prepared and have something definite to suggest or propose.

Relative Importance of the Subordinate

In large plants where there are a good many sub-executives, you must satisfy the workman that you can help him, next satisfy the foreman immediately in charge, next the superintendent in charge of the department.

When you are ready to see the "boss" and you can interest and impress him, you will find how well spent was your effort to first sow the seed of "the gas way" amongst his subordinates.

There is a psychological reason why it is well to see your workman, foreman and superintendent first.

Considering that there are many gas men of years of experience in the business who know little about the application of gas for industrial purposes, it is hardly to be expected that the superintendent or foreman of a plant will know much about it.

If you have been patient and unassuming, in driving home "the gas way," you will have enthused that superintendent or foreman about your proposed changes, which means increased production, lower overhead, etc., in other words, a better showing on his part (here again the same question appears: "What is there in it for him?")

Now, no matter how much you have impressed your big man, it is hardly likely that he will do anything without first consulting his department head.

Your preliminary work now begins to tell.

The department head is by now familiar with your proposed changes, and will be heartily in favor of them. Had you neglected to do this perliminary work there is danger of the department head opposing or belittling your proposition when the boss takes it up with him.

Feeling You Can Benefit Your Prospect

Once you can get to feel in your heart of hearts that you can benefit your prospect, you will carry an assurance about yourself that will surprise you.

Your attitude will be not that of a suppliant begging for an interview, but you will walk in on your prospect, full of confidence, not as if you wanted to sell him something, but as if you brought him a valuable gift.

Advantage of Not Being Perfect

Do not "press." Do not be afraid to say "I do not know." Your prospect will have a wholesome respect for you if you occasionally "do not know," or if you make an admission here and there that is derogatory for your equipment.

A man that knows it all, and who has something that is "absolutely 100 per cent perfect" inspires us all with a feeling of disgust. Most important of all, do not be afraid to speak to a man in thousands of dollars when discussing a new installation. Most of us, especially beginners, are timid to speak to the prospect in large

figures. He'll spend the money if you can show him that it will benefit him.

The writer visited a plant some time ago and the proprietor walked out into the factory with him. Some six men were setting a new lathe into place, and the proprietor, with a light in his eye, and a bulging chest, observed: "Look at this new $6,000 lathe; is she not a dandy?" I said she certainly looked that way to me. I then asked him, "What will this new lathe do for you?" "It will considerably increase my production on one article," was his reply. I then said, "Suppose I wanted you to spend $6,000 on gas equipment that will do more for your production as a whole than any three lathes?"

He scratched his head.

I then took courage to say: "You are so all-fired modern when it comes to machinery, lathes and what not, but are still in the stone age when it comes to fuel. You would not attempt to use the same mechanical equipment that your great grandpa used, carrying coal in buckets even as your ancestors carried water from the well, and your fuel is one of the great factors of modern production."

He asked me to figure out what he needed, and shortly thereafter spent $2,500 for gas equipment.

Not Selling Bricks and Shells

It is not always well to make a sale for the sake of a sale. Remember you are not selling so many thousands of cubic feet of gas, or so many tons of furnace shells and firebricks. You are selling gas service.

If you can stick to this point—service, believe in it and practice it, you will be repaid a hundred fold for the few prospects of possible sales that your better judgment caused you to turn down.

Sometimes from the smallest beginning in an industrial plant you can build up a collossal consumer.

The writer has particularly in mind a firm in Portland, Ore., that started with one appliance using 30,000 cu. ft. of gas per month. In less than a year they had eight appliances using about 400,000 cu. ft. per month, and two years from that small beginning they used over 20,000,000 cu. ft. per month.

Bureau of Labor Statistics on Increased Gas Rates in American Cities

Figures compiled by the Bureau of Labor Statistics of the United States Department of Labor show the advances in the price of gas for household purposes were general among American cities during the year ending April 15, 1919. The increases varied from 5 per cent to 45 per cent, the latter being the advance in Buffalo, which went from $1 gas to $1.45.

A general increase also was registered in the cost of natural gas and in manufactured and natural gas mixed. In Kansas City the price of natural gas went from 60 cents to 80 cents per 1,000 cu. ft. The advance to consumers of the District of Columbia was from 90 to 95 cents. Following is the report prepared by the bureau of labor statistics on the prices of 1,000 cu. ft of gas used for household purposes:

Manufactured Gas

	1918.	1919.
Atlanta	$1.00	$1.00
Baltimore	.75	.75
Birmingham	.95	.95
Boston Co.—A	.90	1.00
Boston Co.—B	.85	1.10
Boston Co.—C	.80	.95
Bridgeport	1.00	1.10
Buffalo	1.00	1.45
Butte	1.485	1.485
Charleston	1.10	1.10
Chicago	.755	.88
Cleveland	.80	.80
Denver	.85	.95
Detroit	.75	.79
Fall River	.95	.95
Houston	1.00	1.00
Indianapolis	.55	.60
Jacksonville	1.25	1.25
Manchester	1.00	1.10
Memphis	1.00	1.00
Milwaukee	.75	.75
Minneapolis	.77	.95
Mobile	1.10	1.35
New Haven	1.00	1.10
New Orleans	1.00	1.30
Newark	.97	.97
New York	.80	.80
Norfolk	1.20	1.20
Omaha	1.15	1.15
Peoria	.85	.85
Philadelphia	1.00	1.00
Pittsburgh	1.00	1.00
Portland, Me.	1.00	1.40
Portland, Ore.	.85	.779
Providence	1.00	1.30
Richmond	.80	1.00
Rochester	.95	.95
San Francisco	.85	.90
Scranton	1.15	1.30
Seattle	1.25	1.25
St. Louis	.75	.75
St. Paul	.85	.85
Washington	.90	.95

Natural Gas

Buffalo	.30	.35
Cincinnati	.35	.35
Cleveland	.30	.35
Columbus	.30	.30
Dallas Co.—A	.45	.45
Dallas Co.—B	.30	.30
Kansas City	.60	.80
Little Rock	.40	.45
Louisville	.648	.648
Pittsburgh Co.—A	.30	.35
Pittsburgh Co.—B	.275	.35

Manufactured and Natural Mixed

Los Angeles	.68	.75

Largest Gas Space Heating Installation Ever Secured

What is thought to be the biggest gas-fired space heating installation ever obtained is one secured recently by Harry Dolerin of the Chattanooga Gas Company. The equipment consists of 137 Claw Gasteam radiators supply 8,400 sq. ft. of radiation.

Two hotel ranges proved the entering wedge towards securing this business.

Gas that Will Give Most Satisfactory Service in His Premises Not Necessarily the Best Gas from the Consumer's Standpoint

Indiana Gas Standards Committee Recommends the Adoption of 570 B.t.u. Standard — Reasons Underlying Its Decision

The Indiana Gas Standard Committee, composed of H. O. Garman, Chief Engineer Public Service Commission H. C. Peffer, Municipal League of Indiana, J. B. Klumpp, substituted for by C. O. Bond, and A. G. Phillips, U. S. Bureau of Standards, having reviewed the rules for gas service proposed for adoption by the Public Service Commission, and having made a careful study to determine what in its opinion should be the heating value standards for artificial gas sold in the State of Indiana, and having reached its conclusions, believes that its work is completed. The members have agreed on all points, that the recommendations contained in its report represent the final individual opinion of each member, of what will prove fair to the people and the public utilities, and best for the State of Indiana as a whole.

In its work the committee has come in contact with many public officials, officials of public utilities, and private individuals who have, without exception, not only shown a fine courtesy, but also have furnished invaluable data and information. Their opinions also have been valuable and have received due consideration.

During the first part of 1918, and in fact extending well into the summer of that year, the Public Service Commission received frequent complaints from the citizens of a number of different localities in the State regarding the quality of the gas service rendered by their local companies. The exact cause of the trouble was not always evident from the complaints; in a number of cases it apeared that the heating value of the gas was low; but at all events the general situation was serious enough to demand investigation.

Necessity of Using Local Coals

Conferences with gas company officials brought to light some of the war-time difficulties under which they were laboring. Because of the zoning system adopted by the United States Fuel Administration coal gas operators were forced to use a larger proportion of Indiana and Illinois coals. Aside from the greater difficulty in handling, particularly in plants containing the usual horizontal retorts, these coals give low yields of gas of low heating value. Furthermore, the coke produced is usually of an inferior quality, and when used in the water-gas machines reduces the capacity and efficiency of operation. While fuel of any kind was difficult to obtain, even with the assistance of the priority orders issued by the Government, gas oil, which is required in water-gas manufacture to produce high heating value gas, was even more scarce, it being urgently needed for military purposes.

In fact, the shortage of both coal and oil became so acute that the United States Fuel Administration seriously considered issuing an order requiring a reduction in the heating value of manufactured gas throughout the country to 528 Btu. per cu. ft. in the hope that conservation of coal and oil might thereby be effected. Under such circumstances it is not surprising that the quality of gas service was seriously impaired in many localities, not only in this State but over the entire country.

The Public Service Commission of Indiana, realizing those difficulties, but at the same time anxious to require the maintenance of the best possible service under the circumstances, decided to call a public meeting for a frank discussion of the whole situation. Accordingly such a meeting was held at the State House in Indianapolis on Oct. 8, 1918, and was attended by city authorities and gas company officials from all parts of the State, and by members of the National Bureau of Standards and of the United States Fuel Administration. A proposed new set of rules for gas service was presented by the engineering department of the Public Service Commission, and was offered to the meeting for consideration before its final adoption. A lengthy discussion followed, particularly as to what heating value standards should be required. Under the then existing war-time conditions it appeared entirely impossible for most companies to maintain the State standard of 600 Btu. per cu. ft., but there was considerable diversity of opinion as to what heating value could and should be expected. The information on this subject seemed rather meager; and it was finally decided that a committee be appointed to make such investigation, conduct such tests, and collect such data as it might require to draw its conclusions as to a fair heating-value standard, and to report its findings to the Public Service Commission. It was agreed that the committee should consist of four senior members, one to be appointed by each of the following interests: The Municipal League of Indiana, the Indiana Gas Association, the Public Service Commission of Indiana and the National Bureau of Standards.

At its first meeting on October 28, the committee carefully considered the set of rules for gas service proposed by the engineering department of the Public Service

Commission. Some corrections and alterations were suggested.

Coal and Water Gas Plant Possibilities

Attention was then turned to the question of the heating value standard. It was agreed that water gas plants could mainain a standard of 600 Btu. with a fair degree of efficiency, provided they had sufficient oil. Although at this time oil was difficult to obtain and its conservation was of the utmost importance, yet the committee believed that such a standard as could be maintained by plants producing coal gas would prove practicable for water gas also, and further discussion of this subject was postponed.

There was, however, a lack of information as to what performance might reasonably be expected of the coal gas plants in the State, particularly using the large percentages of local coal which had generally been allotted to them. A rather exhaustive investigation of all facts which might lead to a decision as to what heating value gas would be practicable of maintenance in these plants, was therefore decided on.

The field work of the investigation appeared naturally to resolve itself into three parts: (1) The collection of data from the files of the Public Service Commission and from the records of the companies themselves. (2) Exhaustive plant tests at a few of the plants in the State. (3) A number of short inspections of coal gas and coke oven plants by members of the committee to gain general information as to works conditions, and by checking the various calorimeters to establish the reliability of the data and records obtained from the companies during the earlier stages of the work.

On Nov. 11, the armistice was signed and conditions throughout the country assumed a new aspect. Oil shortage became less acute, although the price remained high. The coal-zoning system was abolished, allowing companies the opportunity of obtaining supplies of high-grade gas coals which due to the cessation of many war industries, became more plentiful. It was, however, deemed desirable to continue the work of the committee in spite of the altered situation, and the investigation became in fact one of peace-time rather than war-time conditions.

The "preliminary investigation," namely the collection of existing data was conducted by H. B. Heign of the Commission engineering staff, and by M. J Frankel, of the Bureau of Standards, during the latter part of November and the early part of December, 1918. Figures as to population, gas sales, miles of mains, number of meters, etc., were obtained from the files of the Commission. A considerable proportion of the coal gas and the mixed gas plants in the State were visited, and valuable data as to gas heating values, gas yields and kinds of coal used for a number of years past were obtained General condition of equipment and other pertinent points were noted, as well as the facilities for possible future tests by the Committee. The data obtatined were assembled and tabulated and a short discussion prepared by the engineering department of the Public Service Commission; the complete report of this preliminary investigation thus prepared was submitted to the committee for consideration at its next meeting on Jan. 3, 1919.

Running the Tests

Tests extending over the period from February 2 to April 10 were run at New Albany, Crawfordsville, and Huntington. The heating value of the gas at the inlet and outlet of the holders was observed at frequent intervals, gas analyses and other tests were made, the coal used was weighed and the yield of gas computed, and a complete and detailed record of retort-house operations was kept. H. O. Garman, chief engineer of the Commission, as chairman of the committee, was in charge of the tests, but, due to the fact that he was unable to be present continuously, A. I. Phillips, associate gas engineer of the Bureau of Standards, undertook the active supervision of the work. C. O. Bond, manager of the Physical Laboratory of the United Gas Improvement Co., was present continuously as the representative of the Indiana Gas Association, acting for J. B. Klumpp. Observations were made by a force consisting of the following engineers: F. J. Hiss, plant engineer, Northern Indiana Gas & Electric Co., Lafayette, Ind.; J. Weaver Smith, appliance engineer Citizens Gas Co., Indianapolis, Ind.; F. W. Boetol, J. T. Hallett, D. W. Hufferd, and M. F. Scott, engineers on the staff of the Public Service Commission of Indiana, and M. L. Abbott and M. J. Frankel, assistant gas engineers of the National Bureau of Standards.

In the series of short investigations, it was contemplated that only six plants would be considered, but after several had been visited, it was realized that the data being obtained was so valuable that a continuation was decided on. Thus, in all, plants in fourteen different cities were visited, namely: Auburn Junction, Warsaw, Goshen, Elkhart, Rochester, Muncie, Greencastle, Terre Haute, Vincennes, Evansville, Washington, Seymour, Columbus and Franklin. Calorimeters were checked to determine the reliability of previous heating value records, the plants were visited, and equipment and operating practice carefully gone into, to determine not only what heating value gas *was being* produced but what the committee believed the plant *should* produce. This part of the investigation was conducted by Messrs. Abbott, Bond, Hufferd and Phillips.

Remarkable Unanimity of Opinion

Finally on May 15, the committee met in the Claypool Hotel, Indianapolis, to discuss the results of the whole investigation. It is interesting, that as a result of the investigation, the members of the committee could agree unanimously on all factors which it was believed should be considered in determining the heating value standard; and when each member, without having discussed the matter with the other members finally named the standard which he believed correct, the difference between the highest and lowest named figures amounted to but 15 Btu. A discussion of the various factors which have led the committee to its final decision follows:

The fixing of the most satisfactory heating value standard for manufactured gas is a task requiring careful consideration and expert judgment. Economic conditions, practical manufacturing considerations, and maximum satisfaction to the consumer are some of the determining factors; and no standard may be said to be

correctly set which does not take them all into account.

In the early days of the industry gas was used almost exclusively for lighting and the brilliancy of its flame was the quality of most importance to the average consumer. The candle power of manufactured gas increases very rapidly with increase in heating value and it is quite natural, therefore, that during this period high heating values were maintained, though this latter quality of the gas was not regularly tested. As time went on, gas came to be used more and more for purely heating purposes, gas ranges and water heaters replaced coal stoves, while mantle lights replaced the inefficient flat flame burners. Since municipal and State authorities have gradually come to realize that a better and more uniform service can be maintained in the appliances which have now come into use by enforcing heating value rather than candle power standards the latter have in most places been discarded. In view of the fact that manufacturing methods had already been pretty well established, it is not surprising that many of the early heating value requirements were high, and the existing prices and quality of materials perhaps encouraged this. Some localities even attempted to fix heating value standards to conform as nearly as possible to the quality of the gas which had been produced under their old candle power regulations. Few attempted to reach an answer through scientific investigation. The committee is advised, for example, that the standards of 600 Btu. per cu. ft. approved by the Public Service Commission of Indiana was selected because Wisconsin had decided on this figure. But a standard suitable for one State may not necessarily prove best for another. The type of plants in use, the character of coals available, and other important local questions must be considered. The standard in Wisconsin was set after an investigation of certain plants in that State, most of which made water gas, and under the then existing local conditions the figure was probably wisely selected. In the present investigation, the committee, has attempted in all fairness, to reach a decision based on the data obtained, and on a knowledge of local conditions in the State.

What the Consumer Is Interested In

The question which must necessarily play one of the most important parts in any such investigation is what heating value gas will give the consumer the most satisfaction for his money. It is not sufficient to say that within certain limits an appliance will give about the same efficiency with one heating value gas with another provided it is properly adjusted. In this the consumer is only mildly interested but he is mightily interested in the size of his monthly gas bill and also in the avoidance of black mantles, and carboned cooking vessels as well as of burners which flash back when he attempts to use them. The gas which will give the most satisfaction is the one that under the conditions apt to be met in the consumer's house, will do his cooking and lighting satisfactorily and leave him at the end of the month with the smallest bill; in short, will "boil the most beans for a dollar" and give the least cause to call the gas company complaint department.

Practical manufacturing considerations play a very important part in any attempt to reach this most desirable end, for it is obvious that a gas which may give sufficient service may be so difficult or inefficient of manufacture as to make its cost high and therefore render it most unsatisfactory to the consumer. Again, it is difficult to maintain the heating value of certain gases constant with the result that mantles become black, cooking utensils dirty, or burners refuse to work; and thus while the consumer may not find his bill much greater, the service is unsatisfactory. More cost is not the sole criterion of satisfaction.

Thus it is evident that the mere averaging of the heating values obtained at the various plants, or even the averaging of the heating values which the committee believes they could or should maintain, will not give the answer sought. The consumer is forgotten, economic conditions are forgotten, and efficiency is averaged with inefficiency. The standard must be such as to give the consumer a satisfactory service to permit of economical plant operation—otherwise the service will be expensive—and in general to conserve the interests of the State as a whole. Due weight must be given to each one of these factors. Thus the committee approached the final consideration of the subject convinced that their conclusions must be a matter of judgment based on a thorough knowledge of conditions throughout the State.

Uniformity of Paramount Importance

The investigation has convinced the committee that in any consideration of heating value uniformity is of paramount importance. The heating value of the gas should be maintained with as little deviation as possible either above or below whatever standard may be fixed. Uniformity is one of the most vital factors in good service. Within reasonable limits the actual averages is of less importance. Deviations above the standard are as harmful as those below. A large decrease in heating value will cause inconvenience, the flashing back of stove burners and lights, but no permanent harm is done. But with heating values which are unusually high, cooking utensils become coated with carbon and may lose as much as 25 per cent in efficiency, mantles become black and often must be discarded, and ceilings are discolored. Thus actual financial loss occurs in addition to the unsatisfactory service. Electric lighting furnishes an analogy; with low voltage, lights will become dim, but if the voltage becomes too high they may be blackened or the filament may be entirely destroyed.

The committee found that at Auburn Junction and Vincennes, although the average heating value of the gas was low, yet the service appeared to have become satisfactory as soon as uniformity could be attained. On the other hand in another municipality an average of over 600 Btu. is maintained, but there is a variation of over 100 Btu. between the maximum and minimum values. It is understood that this company is flooded with complaints.

Adopting a Maximum as Well as Minimum Limit

The committee believes that present day appliances can be adjusted to give the consumer an entirely satisfactory and efficient service with any average heating value between 550 and 600 Btu. per cu. ft., but tests have shown that they cannot be adjusted to give satisfaction with *variations* amounting to 100 Btu. Firmly believing in the importance of uniformity, this commit-

tee makes a new departure. It recommends to the Public Service Commission the adoption of a maximum as well as a minimum limit. It believes that violations of the maximum are to be discountenanced equally with those of the minimum. Furthermore it believes that the maximum and the minimum values should allow of less deviation from the average than has in the past been deemed necessary, and recommends that they be fixed respectively about five per cent above and five per cent below the average value decided upon.

At the outset of the investigation it appeared that the heating value which coal gas plants would be capable of producing economically would be the chief factor in determining the standard. More and more, however, the value of uniformity came to be realized until now the committee believes that the standard should be fixed at such a point as will allow the maintenance of a uniform heating value. A standard which the plants must always be straining to comply with will inevitably lead to wide variations and unsatisfactory service. Furthermore, gas of higher heating value, even if produced with a fair degree of uniformity at the plant, is more apt to be affected during distribution by changing temperature conditions with the result that the service to the consumer is often impaired. The committee further believes that within reasonable limits the use of high heats and other legitimate methods of increasing the yields of gas, even at the expense of heating value, should not be discouraged. Not only is the capacity of the plant increased, with a resulting tendency to decrease the ratio of capital investment to output, but within certain limits the efficiency of the plant and the number of heat units obtained in the gas for each pound of coal carbonized tend to increase, all of which factors lead to an ultimate lower cost to the consumer.

On the other hand the committee is firmly opposed to any heating value low enough to allow of the admixture of large quantities of diluents. A sharp distinction should always be made between low heating values caused by high heats and those caused by these diluents, as the effects upon service are very different. One hundred per cent efficiency in operation is manifestly impossible, and small quantities of furnace gases almost inevitably leak through the retorts, while the admission of not over one-half per cent of oxygen to assist in purification is desirable and considered good practice. In small quantities such diluents should be expected and considered as regular constituents of the gas, and they do no appreciable harm. But in large quantities, they decrease the heating value of the gas and the air requirement for combustion; they increase its specific gravity and the air entraining power; and they decrease the flow through the burner orifice. Every one of these changes in the characteristics will tend to bad service, flashing-back of burners, and other troubles with appliances, often resulting in complaints which are erroneously ascribed to poor pressure. Low heating values caused by high heats or light seals are far less objectionable, for accompanied by the reduction in heating value comes a reduction in specific gravity, and the altered characteristics of the gas tend to offset each other and maintain rather than destroy good service.

Pitfalls in a Lenient Standard

Furthermore, heating value requirements which are too lenient inevitably lead to careless plant operation. The apparatus is not kept in proper repair, and the morale of the whole organization is lowered. Sooner or later unsatisfactory and expensive service is sure to result.

Thus the committee recommends for coal gas a heating value low enough to be met and uniformly maintained provided the equipment is kept in good condition. Finally it hopes that, if adopted, the heating value figure named by it will permit, and in fact encourage, the use of some percentage of local coals. Conservation, decreased demand upon our overtaxed transportation systems, and economic advantage to the State will inevitably follow.

At first it would appear that the fixing of standards for water gas and coal gas would be quite different problems. It is true that water gas can be produced easily and efficiently over a rather wide range of heating values. Practicability of the standard is therefore of not such great importance, nor is uniformity so difficult to attain; but otherwise the problem is the same as for coal gas. The economic side of the question, however, assumes greater importance.

Water gas is, in fact, a mixture of two gases; the one of low heating value produced by passing steam over highly heated hard coal or coke; the other of very high heating value produced by gasifying a petroleum distillate. The relative availabilities and prices of coal and oil play a very important part in the fixing of a standard for water gas. At the present time oil is expensive and the quality of that which it is possible to obtain for gasifying is constantly becoming poorer, while on the other hand there seems to be some prospect of a recession in the prices of coal and coke. It would thus seem that the tendency should be a decrease rather than an increase in the heating value standards for water gas. It should be further noted that within reasonable limits the smaller the quantity of oil used, the higher will be the efficiency of its utilization.

The committee further feels that there are advantages in having the same standard for both coal and water gas. In plants producing both this is especially desirable; while in a number of coal gas plants having an emergency water gas equipment difficulties and confusion would be particularly apt to arise were the standards different.

Finally, after taking all matters into consideration, after having visited seventeen different plants in various parts of the State, and having carefully examined all data collected, the committee believes that it is qualified to make its recommendations. It recommends to the Public Service Commission the fixing of *a monthly average total heating value requirement for artificial gas manufactured in the State of Indiana at* 570 *Btu. per per cu. ft.* It further recommends a requirement that the heating value of the gas be maintained with as little deviation as possible from this figure, and to this end recommends that the daily average heating value for companies maintaining this standard shall in no case exceed 600 Btu. nor fall below 540 Btu. per cu. ft.

It is realized by the committee that cases may occur in which by-product coke ovens and so-called "slot ovens" may find it it uneconomical to manufacture gas having an average heating value of 570 Btu. per cu. ft. Each such case should be dealt with by the Public Service Commission on its merits. It is recommended, however, that in no such case shall the monthly average heating value fixed be less than 550 Btu. per cu. ft., with limits or variation in the daily average not more than 5 per cent above and below this figure.

American Gas Engineering Journal

SIXTY-FIRST YEAR

Published Weekly by AMERICAN GAS LIGHT JOURNAL, INC., 150 Nassau Street, New York, N. Y.

Elbert P. Callender, Pres. S. G. Krake, Vice-Pres. Frederick A. Southworth, Sec'y-Treas.

EUGENE C. MILES, Editor

Subscription $3.00 per year, in cluding postage in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $500—Single Copies, 10 cents

Contents of This Issue

Publicity Useless Unless Utility Policy Is Progressive—By Ralph Elsman 45

Gas Engine Vibration 46

Way to Industrial Business More Often Found Through the Side Door Marked "Factory Entrance" Than Through the Front Office Marked "Private"—By Harry Dobrin 47

Bureau of Labor Statistics on Increased Gas Rates in American Cities 48

Gas That Will Give Most Satisfactory Service in His Premises Not Necessarily the Best Gas from the Consumer's Standpoint 49

Editorials 53

Merchandising Gas 56

It Doesn't Believe in Welfare Work—By S. G. Addison 58

News of the Gas Industry 60

As the Journal Views It

Unless There Is Something Worth While to Say It Is Better that It Be Left Unsaid

A degree of misapprehension apparently has arisen in regard to the attitude of the American Gas Engineering Journal towards the newly organized advertising section of the American Gas Association. Because we have discussed this matter but slightly in our editorial columns, and because our editors and business men have not taken the floor at conferences concerning it, some have gotten the impression that we are unsympathetic towards its formation.

The American Gas Engineering Journal has long been convinced of the need of such agency in the gas industry. It has had much to say in advocacy of the idea, but little to say in its working out. Its reason has been that it does not consider itself a specialist in means of reaching the class of people a gas-industry publicity effort must aim to reach.

If the advertising section of the American Gas Association was organized to "reach" gas men, we feel we could give it very valuable council. As its object is rather to reach the masses, the great consuming public, we rather feel that its activities are to a degree outside of our scope. Mr. Wrightington unconsciously voiced our attitude at the last conference when he alluded to "an advertising section started by the ranks and conducted from the ranks." There are men employed within the gas companies who are specialists in this line of work. We believe them more competent than we are, to say how the new advertising section should direct its activities.

Because the editor of a contemporary has been especially prominent in the formation and organization of this advertising section, it seems desirable to add that

this statement of our viewpoint should by no means be taken as a criticism on our part of his connection with the matter. Mr. Saul has had previous experience which puts him within the scope of Mr. Wrightington's "men from the ranks." In our opinion, he is not competent to advise merely because he has editorial experience with a contemporary, because here he aims for a specialized field, but rather because of previous experience wherein he aimed at the very field the advertising section must reach.

The AMERICAN GAS ENGINEERING JOURNAL is in nowise unsympathetic towards the advertising section of the American Gas Association. Any failure on its part would represent a downright misfortune to the gas industry. When it fails to advise, it is because it believes there is better advice to be had than it can offer—from right within the ranks.

Wherein We Begin to Get Prompt Action

Some weeks ago we had occasion to commned the appointment made to the office of secretary-manager of the American Gas Association. The appointee was a man well versed in the theory and practice of gas manufacture and use and conversant with the difficulties and problems of gas companies in relation to their consumers. To the best of our knowledge he had no previous experience in secretarial work, as related to association work, but we believed that he had in other work manifested sufficient mental flexibility to give assurance that he would speedily adapt himself to the unfamiliar features of his new responsibilities.

We have always believed that the secretary-manager of the National Gas Association should be, primarily, thoroughly and generally educated as a gas man. His education as to association management by comparison was a matter of minor importance.

As an evidence of the value of having a man thoroughly informed as a gas man in such an office we offer the following: In the July 4 issue of the *Metal Worker, Plumber and Steamfitter,* the following article appeared:

"From G., Louisville, Ky.—Referring to the remarks of 'A. L. B.,' in the issue of May 23, regarding the recooling of storage water by gas heater coils, the writer is willing to say there is more heat lost that way than is suspected by most people. With high-priced gas, a flue-connected heater and no damper, or a damper not used, the loss from this source is material; in fact, it caused the writer to discard the common check damper and substitute a positive valve damper that effectually stops the current through the flue pipe when closed. One common source of loss is no damper; another, that of not closing the damper when the coil burner is shut off. Still another, perhaps the worst of all, is not regulating the damper to suit the degree to which the coil burner is turned on.

"Almost every day the average outfit is heated up three times a day, especially in mild or warm weather. On washing or scrubbing days the burners, turned on more or less, according to need, are kept burning steadily. If the damper is open too much the heating of the water is slow, but the gas bill mounts up just the same. If the damper is not open enough, then proper combustion of the gas does not take place and the lack of hot water and abundant waste of gas are both in evidence sooner or later.

"Another point which the average user seems incapable or unwilling to understand is that, considering the length of gas travel, size of heater case, the amount of air that can be admitted, etc., there is a limit to the amount of gas that can be properly consumed. Generally the housewife thinks the higher she turns the gas the faster the water will heat. But if more gas is turned on than is rightly consumed, there is waste of the fuel and lag in the heating. Also, when a burner has been turned high enough to soot the coils once, there is a great retarding of the transmission of heat from gas to coils until the coils are cleaned. I have been called in about the poor heating of a gas outfit and found nothing wrong except the coils covered with a coating of soot. In some instances I have known soot to be left on the coils indefinitely.

"In the average residence or apartment kitchen in cool weather, when doors and windows are closed, it is not only undesirable but positively dangerous to use a gas heater without a flue connection. Bathroom instantaneous heaters have killed many people through lack of flue connections. Death from this cause became so prevalent that the law is now quite general on the subject—an instantaneous gas heater must have an ample flue connection. The law ought to be the same on range heaters, and a hood should be required over the open burners of a gas range. The common kitchen is often not twice the size of an ordinary bathroom, yet we frequently find a range heater, with no flue pipe, going full tilt; at meal time from one to four burners of the range are burning, and as soon as baking is needed the range oven burners are added to these. In all a greater consumption of gas than takes place in the common run of bathroom instantaneous heaters.

"What saves the people from prompt death under such circumstances? The room being larger than a bathroom and generally open to other rooms is the only reason people don't die in their kitchens in cool weather. It is suspected that many sudden deaths called 'heart disease' by the doctors when they do not know the real cause are induced by the poisoned air in kitchens resulting from the products of combustion being turned loose in the room. The danger is not over because sudden death does not occur. The gases from the kitchen poison the air of all the living apartments. The result is many puny, pale-faced, ailing children that wind up with weak lungs, tuberculosis or other ailments on account of impure air, all due to a preventable cause.

"The writer not long since lost a plumbing job. His alleged friend was somewhat short of cash and another plumber friend loved him $10 more and got the job. Three weeks later the gentleman was found nearly dead in his bathtub. Fumes from an instantaneous heater without a flue connection had suffocated him. Saving $10 almost cost his life and $300 to boot. He knows now why the other fellow was $10 cheaper."

Under date of July 11 this letter went out from the office of the secretary-manager of the American Gas Association to the editor of the *Metal Worker, Plumber and Steamfitter*:

"In your issue of July 4, 1919, No. 2375, there appears, under the heading 'Readers' Information Exchange,' an article entitled 'Gas Heater Cools Storage Water,' from 'G., Louisville, Ky.'

"While the article is intended to be an answer to a previous article by 'A. L. B.' regarding the recooling of storage water by gas heater coils, published in the issue of May 23, 'G.' takes advantage of the opportunity to make statements so palpably unfair and inaccurate that to permit them to go unchallenged may create an erroneous impression detrimental to the public and to the gas industry as well.

"The first statement to which exception is taken is as follows:

"'In the average residence or apartment kitchen in cool weather, when doors and windows are closed, it is not only undesirable but positively dangerous to use a gas heater without flue connection.'

"The fact that in the city of New York there are over 900,000 apartment kitchens which have gas-burning appliances without direct flue connection, and their use permitted by the authorities, is the best refutation to the statement that their use is 'positively dangerous.' The statement is not sustained by the statistics of the New York Department of Health, nor by any competent authority in this city. The advisability of requiring gas ranges to be hooded, not direct flue connected, is a vastly different proposition because of the oven operation and the necessity of providing some means by which the heated gases and the odors and vapors arising from baking meats can be removed from a room.

"When a gas-burning appliance is properly adjusted to insure perfect combustion, no deleterious products can arise which would in the slightest degree contaminate the air of a room and make it injurious to health. Carbon dioxide, or carbonic air gas, which is produced by gas combustion, is present in the purest of outdoor air in the proportion of four parts in 10,000 cu. ft. of air, and produces no discomfort or ill effects if less than 225 parts in 10,000 cu. ft. of air are present.

"On account of the ability of gases to diffuse through even the tightest walls used in building construction, the proportion of carbonic acid gas in interiors rarely rises above twenty parts in 10,000 cu. ft., though for experimental purposes this proportion has been made as high as fifty parts in 10,000 cu. ft. This was accomplished only by resorting to exceptional means to secure a high percentage of this gas. Thus, practically speaking, it may be said that it is impossible in practice to obtain enough carbonic acid gas in an ordinary room to produce the slightest effect upon the bodily functions, even when the most sensitive tests are employed to detect such effects.

"I can quote from the writings of many eminent scientists who have made exhaustive tests to prove the correctness of this statement.

"The statement that *'bathroom instantaneous heaters have killed many people through lack of flue connection'* is a misstatement of fact. There is a possibility that, due to the improper use of an appliance, some fatality in 'G., Louisville, Ky.' locality may have occurred, but the statements that *'many people have been killed through lack of flue connection'* and that *'death from this cause became so prevalent that the law is now quite general on the subject —an instantaneous gas heater must have an ample flue connection'* are not sustained by actual facts.

"We know of no law in any city of the first class in the United States which requires instantaneous gas heaters to be flue connected, and, due to the possibility of a back draft (even when a back-draft diverter is attached to a flue-connected appliance), extinguishing the flame and the unburned gas filling the room, the passage of such a law would be inadvisable. The statement that 'death from this cause became so prevalent' as to require the adoption of such a law is a gross exaggeration, if not wilfully false.

"The statement that *'it is suspected that many sudden deaths called "heart disease" by the doctors when they do not know the real cause are induced by the poisoned air in kitchens resulting from the products of combustion being turned loose in the room'* seems to be an indictment of the medical profession, but as a matter of fact it is made without any justification and is simply ridiculous. No physician with any degree of intelligence could be so misled. If 'G., Louisville, Ky.' will devote some study to the question of hygiene and proper ventilation, he will be surprised to learn that instead of gas, properly burned, being a vitiating agency, it possesses positive attributes of value in that it accelerates the ventilation, adds the necessary moisture and destroys the disease-bearing germs exhaled from the lungs and skin of the inhabitants of a room.

"The whole tone of the article reflects 'G.'s, Louisville, Ky.' lack of knowledge upon the subject of which he writes. Possibly he was sincere and really believed in the theories he has advanced, but if he is seeking the truth regarding gas burning, and it is not difficult to find, many of his theories will undergo a decided change and in place of 'damning' its use, I will venture to say, he will become one of its strongest advocates."

There can be no doubt as to the result of this letter. Any reputable publication deems it its paramount duty not to present only one side of any controversy, but all sides. Also the span of human knowledge is boundless. No man, not even an editor, con hope to ever store it all away in the narrow limits of a comparatively small brain. Statements creep into excellently-edited publications either through the human liability to oversight or through editorial lack of enlightenment on that particular subject that are erroneous. The principal anxiety of any right-thinking editor once such things have been brought to his attention is to set things right, to correct in his readers' minds any misinformation he might have given them. It can be taken for granted that the editor of the *Metal Worker, Plumber and Steam Fitter* will give just as prominent a presentation of Colonel Fogg's protest as he did to the offending article.

But the point we desire to bring out is this: The time to correct such harmful misstatements is promptly.

We have all more or less been dispatching rebuttal to publicity deemed harmful for years past. But we too frequently left considerable grass grow under our feet, for some reason or other before we got our rebuttal out. The result was, by inference, that the mis-impression had remained uncorrected in various minds so long that it became almost impossible to thoroughly uproot it. Besides each of the misinformed persons doubtless were for weeks and months busily spreading the misinformation to others who never viewed the original source, hence our belated correction could never expect to reach them.

Between the date of issue of the July 4 issue of the *Metal Worker, Plumber and Steamfitter,* and the date of Colonel Fogg's letter just a week elapsed. Thus the misinformation can barely have entered the minds of the publication's readers ere the correction came.

This is one advantage of having a man at the helm at the gas industry's headquarters, who doesn't have t first enlighten himself upon gas matters before he can enlighten the layman. It is an evidence of the wisdom of selection manifested in appointing as secretary-manager of the American Gas Association a man versed as a gas man. It is possible that Colonel Fogg may place the secretary's table on the wrong side of the speaker's stand on the platform at the October convention. Such can be readily forgiven. The practical, the really worthwhile things, are counting far more in the gas industry and in all other lines of business to-day. They must inevitably count still more in the future.

Putting the Service Man in Where He Would Have Been Had He Never Gone Away

A London department store, established by an American, has been making it a practice of going that employer who prides himself especially on an "every man's job open to him when he comes back," policy one better by putting every man back where he would have been had he never gone away. Further he has invariably found that the man thus dealt with has fitted up to his new post without difficulty.

There is an appeal in this conduct that is irresistible. It is just and it is eminently practical.

A man's value does not increase as his machine-like ability to perform routine tasks by years of repetition in a quicker manner. It increases with the broadened mentality years of exercising his brain develops within him.

The auditor of to-day is not worth five thousand dollars a year as against the fifteen dollars a week the same man, a bookkeeper, was worth ten years ago, because his mere ability to keep books is superior. The added value lies in the things his mind has absorbed in its ten years of practical working activity which enable him to see and comprehend things the bookkeeper would never have been able to.

Likewise the soldier who had been a salesman. Leaving aside the value of army life as a developer of ability to handle men as an instiller of self-confidence and reasoning aggressiveness, etc., is there any reason why, mentally, he is less equipped to become sales-manager than if, instead of soldiering, he had continued as salesman for the two years. Has he not been developing, broadening, at least as rapidly as he would have developed through the repetition of individual sales he has missed. To our way of thinking we have little reason to preen ourselves simply because we put our soldiers back into the jobs they left. This is the minimum that we can offer them without being shamelessly utter ingrates. To do them real justice, we should put them back into the jobs they could reasonably have expected to attain had they never gone away.

Giving Them Things

Every now and then some American business enterprise decides to deal the death blow to Bolshevism and immediately launches out on a plan of wholesale concession and "giving" to the employee. The net result, in so far as beneficial reaction to the company is concerned, is quite frequently nothing and a considerable depreciation in the moral fiber of the employed is a consequence.

No real man or woman, whether of the ditch digger type or the executive wants anything that cannot be gotten through his or her own efforts. Only the weak desire or merit charity.

Good wages are a right. And the wages at the extreme bottom should be sufficient to defray the expenses of a decent mode of living, an American mode of living and something else besides. Wages for higher planes of labor should scale up in proportion.

Educational work is merely a sensible provision of insurance on the part of the employer. Little value to him will be high wages to employees if they in turn do not get the full value of their dollar in their expenditures, if they are not sophisticated to a degree in investment.

If a doctor or a visiting nurse is sent to an employee's house, let it be made clear to him that it is not that the company is "giving" him something, but that it considers this expense less onerous than that sustained from having him absent unnecessarily from his bench or having him there with his thoughts distracted from his work through anxiety in regard to his family.

Take the "give" out of welfare work and it becomes practical and remunerative. With it included, the effort defeats its own object in that instead of stimulating enthusiasm and good-will it tends to develop a flabbily moraled and spunkless, apathetic breed of parasites.

Gas Engine Vibration

(*Continued from page* 46.)

normal speed, gave no sign of vibration. Then in defense of the opposing argument the engineer in charge averred that when the pump was alternatively driven off a turbine shaft, and the gas engine shut down, no sign of trouble was apparent in the pump. The belt in question was of canvas but in a dry, hard condition and badly glazed, obviously as a result of much slip. It was therefore taken off, its working face scraped and cleaned, dressed with a good preservative, and again put to work. The result was eminently satisfactory. But during these experiments the writer had discovered that the rotative speed of the engine had been carefully recorded when vibration has occurred subsequently again with the belt very much improved in condition and no vibration. The result was 210 r.p.m. against 221—the latter being recorded when vibration was at its worst. From this it was not difficult to deduce the true cause of the trouble. With the belt hard and glazed its coefficient of friction was so excessively low that slip was at its maximum, and the governors not efficiently controlling the engine, the latter would race, and doubtless reached its critical speed for inducing vibration. Then with the belt softened and dressed it was practically eliminated, the speed dropped to its normal 210 r.p.m., and vibration ceased. As a matter of fact this theory was conclusively proved at a subsequent trial run.

By way of supplementing the explanation given above it is a well-known fact, though perhaps difficult of actual denomination, that all solid matter, say like walls or buildings, possess a certain wave period of vibration, and if, as frequently happens, a body in motion acts in vibratory unison with the phenomenon indicated, such synchronism would, if the respective bodies were in contact, induce responsive vibration.

This theory might provide a quite feasible reason for many of the apparently unexplained causes of vibratory trouble, which one meets in the course of one's experience in mechanical and power generation and transmission problems.

Some Interesting Personal Observations Gathered from Behind the Counter of a Retail Appliance Store

Customers "Sell Themselves" the General Rule—Especially When Salesman Does Not Try to Make It Sound Too Good

A Western advertising agency for the past six years has taken charge of all the appliance advertising and general publicity of one of the largest utility companies. Just before entering on a new business year the manager of this advertising agency tried out an idea for increasing the utility company's business from its advertising. His idea was to have one of the staff copy writers, a young woman, visit the company's retail store regularly, get in back of the counter and stand beside the salespeople as they waited on customers buying appliances, for the purpose of checking up on the mental attitude with which the average local housewife approached the purchase of appliances. The copy writers of this advertising company had always co-operated closely with the salespeople of the utility company's retail store, but the head of the advertising agency was looking for further co-operation. His instructions to the young woman copy writer were to observe carefully the mental attitude of prospective purchasers for appliances, and to then draw her deductions as to the sort of copy best suited for the year's advertisements for the utility company's retail store. The observations and deductions thus made seem to be of unusual interest, and we reproduce them herewith in the belief that they will prove of usefulness and value to many sales executives, salesmen and retail appliance advertising men.

One of the most interesting observations was that prospective buyers very seldom come alone. They come in twos, or even threes. Often these twos take the form of a man and his wife, or two women, or a woman and a girl. Two men rarely come. If one person does come alone, he finds out all he can but waits in buying. It seems that in a purchase of this sort he wants someone to support his judgment and witness the ceremony. Nearly everyone is converted more or less to gas, so much so that they really sell themselves. Especially is this true if the salesman can, by a deft comparison with the advances that have been made in other professions, make it not sound too good to be true. And, further, many know that in certain appliances gas is infinitely superior to electricity.

The fear bogey surrounding gas has vanished to some extent. While no woman handles her gas stove and gas appliances in haphazard fashion, at the same time she feels fairly comfortable around them. The main thing is not to arouse this fear.

In preparing the appliance advertisements, the main thing to do, it seemed to the observer, is to carefully preserve a cheerful, sensible, "homey" tone to the ads. Warmth and enthusiasm—very little superlative and no hyperbole. Noticeable exaggeration unsells the buyer. Almost every woman wants this thing—give the right suggestion and she fills in her own rosy hues, and the value of her hues is that they are her own individual picture of the particular service which the article will give to her.

This sounds as if selling gas appliances were superlatively easy. On the contrary, it is not easy to sell them. This simply means that through a long period of advertising education and experience, most women want the appliances. But a great many don't buy them—for a variety of reasons.

The price is one of the big reasons. Many of the gas appliances are high—not unnecessarily so, perhaps, but high in the mind of the very woman who is most interested in them; and that is the woman who has done or now does all or the greatest part of her own housework. The outlay often represents a new suit around for the entire family, or perhaps two months' grocery bills. The operating expense isn't prohibitive—but the first cost often is, or seems so.

No matter how you reason to the housewife on the great convenience of instantaneous hot water and, besides, its necessity or the saving in time and labor, facts which she no doubt appreciates fully, her mental attitude is something like this: "This convenience, or even this necessity, and this saving in time and labor doesn't help me to pay for the washing machine or the hot-water heater, unless I can convert this time and strength into cash—and I can't!" The saving-in-clothes appeal helps some, but this slow saving doesn't

pay for the first big cost of the appliance. And so for the woman to whom the purchase price represents a severe strain—or to the woman who sees it as a severe strain—the $5 down and $5 a month plan is the biggest help possible in selling gas appliances. Bought in this way, the housewife can be persuaded into some little petty economy each month—and really pride herself on her managerial powers. She finds that the cost is not beyond her, after all.

However, there's another woman—as a type. The woman to whom the purchase isn't really a strain; to whom the purchase means simply going without luxury. This woman is even harder to sell to. Perhaps she isn't particularly overworked; she may have some help, wants to keep that help, and is of the conservative order that thinks she is doing all right and ought to get along—although "the appliance would be very nice; and she'll be sure and get it some day." They don't even know just why they think they ought to get along without it—they just feel that way about it.

It's up to the salesman or advertiser to find the reason. The process is on a semi-fortune-telling order—fundamental but general with a little twist that she can apply to herself. It's the sort of thing that provokes the prospective buyer into saying, "Why, that's just exactly how I feel about it"—though she probably didn't know she "felt that way about it" before. Once her reason for not buying is revealed, the reason ceases to exist.

As the observer watched sales being made, it seemed to her that the prospective purchaser has, through the suggestion of advertising, a very good knowledge of what the appliance will do for her, but she wants to know how it works when she gets to the shop. "If I were a salesman," this young woman said, "when possible or practical I would encourage the prospective buyer to work it herself. A feeling of possession is inspired by taking hold of a handle and really working the appliance itself. Perhaps this isn't practical; at any rate, I didn't see it done at all. I did it myself because I asked to do it. The customer not only wants to see it worked, but she usually has something that she herself is particularly anxious to find out about the article. It often is something that the salesman or any other purchaser never thinks of—but she wants to know.

"I have seen a chain of adjectives and enthusiasm hardly listened to, because the buyer was so anxious about some little commonplace matter or was wondering so hard whether she ought to buy this to the sacrifice of Dad's overcoat that she wasn't even listening to the glowing picture or she wouldn't be there. What she wanted was for someone to convince her that she was doing her duty in buying this article."

There's another thing. The thrilling, "peppy" style of copy doesn't ride so very well with the average, middle-class, hard-worked adult mind, especially on a subject such as gas ranges, washing machines, hot-water heaters, room heaters, etc. The copy has to be warm and interesting, but too much pep defeats its own purpose and leaves the reader cold. The subject has to be treated with cheerfulness, sympathy, gentleness and tact. This is true of any commodity which the buyer already wants but voluntarily goes without because she feels that she should. She's got to be sympathetically persuaded that it's right to buy it. You must understand perfectly and then set her right.

It Doesn't Believe in Welfare Work

By S. G. ADDISON

"I have called," said the Hon. John Henry Harrison Bings, member of Congress and president of the Up-State Gas Company, "to secure some first-hand information about the welfare work that the Blankville Gas Company is doing."

"But we are not doing any welfare work," replied the Old Man, "and we do not believe in welfare work."

"That is strange," remarked the honorable Bings; "I have heard that you have a profit-sharing system that is working admirably and that you have gone so far in welfare work for your employees that you furnish them with a clubhouse. You don't mean to tell me, do you, that all these efforts along the line of employee welfare have been discontinued, do you?"

"We still have the profit-sharing system, as you call it, and the clubhouse, and all the other things you have heard about, but we have no welfare work and we don't intend to start any welfare work for our employees. We are paying them salaries and wages high enough so that they don't need any welfare work."

An Effort to Help Themselves

"I don't understand. You say you have your profit-sharing system, your clubhouse and all the other things, but no welfare work. Don't you call these efforts to help your employees welfare work?"

"No," said the Old Man emphatically, "it is not welfare work. It is not any effort to help the employees. It is purely and simply an effort to help ourselves, to make our business pay better. We haven't given the welfare of our employees a single thought, and we have made it plain to them that we have not. We know and they know that the whole idea is to make the business more successful."

"You surprise me," and the air of the honorable Bings was one of doubt and incredulity. The Old Man seemed in earnest, but his statement sounded like a joke. "You don't mean to say that you have been able to make the success with which you have been accredited and openly assume this attitude, do you? I should think that the employees would resent it."

Workers Do Not Resent Honesty

"The trouble with you, Mr. Bings, and a whole lot like you who have done a lot to defeat the purposes of what you call welfare work, is that you like to pose as a philanthropist while filling your pockets with increased profits. You are not honest with yourself or with your employees. I have found that workers do not resent honesty, but that they do resent dishonesty. They don't resent having something given to them for purely business reasons, but they do resent charity. The American employee—and all of ours are Americans, even if some of them were not born in this country—is independent and feels well able to take care of himself. He doesn't like to have his employer interfering with his private affairs or pretending to give him something that he has not earned. He wants a square deal. He doesn't want charity or philanthropy. We try to give our

employees an honest deal and fair treatment. We don't give them any charity. We don't do any welfare work. We don't do a thing for them that will not increase the profits of the business."

"You certainly talk plain enough," impatiently remarked the honorable Bings, "and I suppose I ought to understand what you are driving at, but I most certainly do not expect that you consider yourself honest and right and all the rest of us dishonest and wrong. I wish that you would make yourself a little clearer."

"I have no objection to doing that," replied the Old Man, ignoring the impatience of the honorable Bings and warming up to his subject as he went along. "We will take what you call our profit-sharing system first. This is not a profit-sharing system. It is just giving our employees the franchise, the right to vote in our company, just as they have a right to vote in our country. You see, we are making our company a democracy instead of a monarchy. The system we have of selling stock to our employees and of giving it to them as a bonus is based upon the system of naturalizing foreigners more than upon any profit-sharing system. It's not a profit-sharing system in reality at all. It is simply a system of getting the employees to take a greater interest in the welfare of the company by giving them a vote. We don't care so much how many shares of stock the employees have as we do in giving them the right and creating in them a desire to vote at the stockholders' meetings.

Have in No Sense Laborers

"How much enthusiasm do you think our boys would have had in this war if they had just been shipped over there without having one word to say about it themselves? The reason they fought so hard was because they live in a free country. They have a vote. It was their country, their war, and not simply one that some arbitrary ruler had forced them to fight. It was different in Germany. Germany has done welfare work; but Germany was not a republic, a democracy, and as soon as victories ceased the morale of the Germans broke down. Now, we are making our company a democracy. The employees feel that it is their company. They have a vote, and as a result they are constantly working for the good of the company. We have discarded Prussian methods and adopted methods of a democracy, and it has paid. Nearly all of our employees have a vote in the company, and many of them own a surprisingly large amount of stock. As a result they are loyal and are always looking out for the welfare of the company. We have no labor troubles here, because we have in a sense no laborers. The employees are part owners of the company. They are in a way their own employers. Some of them are practically capitalists and they are satisfied. We don't fight the unions. We can't very well, because the employees own so much stock that if they want unions in the company they can pretty well have them or make a lot of trouble for us; but the unions do no harm. You see, we are just one big, happy family. It isn't welfare work, it isn't philanthropy to give the employees an opportunity to buy stock, to give them an opportunity to get a vote in the company and to encourage this, any more than it is to naturalize men who have come to this country from Europe. It is just simply good business."

"That seems simple enough," agreed the honorable Bings, somewhat calmed, "and I am inclined to believe that perhaps you are right after all. But how about your clubhouse and your business classes? You surely cannot consider them purely business builders."

"Do you call the officers' training camps and the athletic work in the army welfare work, or was the main object to prepare men to win the war in the shortest possible time? I believe that you were instrumental in getting some of the officers' training camps and schools established. Did you consider that you were doing welfare work, or was it work to prepare the country to bring the war to an end sooner? In other words, was it philanthropic work that you were extending to these young men, many of whom were millionaires, or was it purely the business of war?"

"It was war business, of course. The type of men who went to the officers' schools and camps were not the kind who would have anything to do with anything that was not aimed at winning the war in the shortest possible time."

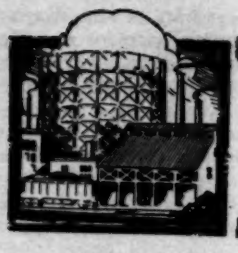
"Well, our schools, clubhouse and all the rest here in the Blankville Gas Company are for exactly the same purpose as were the schools and athletic work in the army. They are to fit this company to better meet the competition of the electric company. You know, we have some real competition. We did not buy the electric company, as you did, because we felt that we would be more successful without it. I believe that our judgment was sound. All the work we are doing in training our employees, both mentally and physically, is aimed at making us more successful in waging competition. You see, we have a little war going on here all the time. To be sure, it is a friendly one and no lives are lost, but it is a form of warfare of competition which keeps up enthusiasm and makes our work, that you call welfare work but which we call simply better business methods, more successful than it would probably be if we had no competition to keep us wide awake and on the alert. You see, we are adopting, and under the circumstances can adopt, methods that proved so successful in the army. In fact, we have learned a great deal from the army during the past few years, and now that our boys are back with us again we are learning still more."

First Need a Change in Point of View

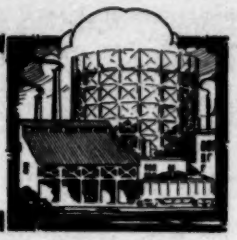
"Your talk has been interesting, even though I can't altogether agree with you. I would like to send some of my directors down here to talk with you. Of course, I don't give a great deal of attention to the details of my properties, but I was interested in what you are doing here because I had heard so much about it from men from all parts of the country. You know, the Blankville Gas Company is becoming quite famous."

"I don't know how famous we are becoming. We are doing nothing that any other gas company can't do if they go about it with the right point of view. I will be glad to talk with any of your directors or officials and show them what we are doing and why we are doing it, but I warn you, Mr. Bings, that you will never make a success of any system unless you change your point of view. I worked my way up from the gas house and I know how the em-

(*Continued on page* 18.)



NEWS OF THE GAS INDUSTRY



First Municipal Gas Controversy Goes Before Commission

The first municipal gas controversy to come before the Michigan Public Utilities Commission has been presented in the form of a petition from the Holland City Gas Company. William W. Potter, member of the commission in charge of municipal utilities matters, refused to file the petition, on the ground that it calls for abrogation of a franchise and the city of Holland has not asked the commission to act. The Utilities Act of 1919 provides that the commission shall not disturb franchise rates except when requested to do so by both the municipality and the company. The Holland company contended that the franchise had been rendered null, but was requested to obtain co-operation of the municipal authorities. This company went into bankruptcy several weeks ago to avoid the franchise contract, asserting that further operation under the franchise would bring financial ruin. The plant has since been sold and the new company contends that it did not purchase the property under any franchise obligations.

Porterville Opposes Bond Issue for Municipal Gas Plant

At a special meeting of the Porterville (Cal.) Chamber of Commerce the unanimous vote of the directors was cast in favor of a resolution opposing the passage of the issue of $200,000 in municipal bonds, proposed for the construction of a city gas plant. The resolution was not directed against the principle of municipal ownership of a utility of this class, but it was pointed out that a bond issue of this size at this time, with labor and material conditions so uncertain, might easily be the source of a serious impairment of the city's credit before the securities could be retired.

American Association of Engineers Establishes New Bureau for Employers

The adoption of a new system for the service department of the American Association of Engineers is expected to make that department one of the best engineering bureaus of the world. F. H. Myers, for nearly a year manager of the association's service department, and D. A. Tomlinson, who recently joined the staff as assistant secretary in charge of railroad work, have jointly evolved a plan for placing members of the association in positions best suited to them. By a modification of the Litchfield classification system the members' applications will be filed under fifty different heads, comprising every kind of engineer. Full details of training, experience and other qualifications are included in the record, so that the matter of choosing appropriate candidates for positions becomes much simplified. The service to the employers has been standardized by the new method, so that a check may easily be made upon developments. The members who are referred for positions are introduced in advance by the department, and a return report made after the position has been assigned completes the record in the association office.

St. Louis Company Offering Small Denomination Bonds to Customers

The St. Louis County Gas Company is offering a limited amount of 6½ per cent five-year bond-secured gold notes, dated Nov. 1, 1918, in denominations of $50, $100, $500 and $1,000, at par plus accrued interest. Special efforts are being made to sell these securities to the company's customers with the view of creating in them a greater interest in the welfare of the company.

Hartford Company's State Tax Levied at $16,833.00

Tax Commissioner William H. Corbin of Hartford, Conn., has notified the public service corporations of the State of the amount of taxes that will be due from them to the State on July 15, and has furnished the State treasurer with a similar statement. The sum which the Hartford City Gas Light Company is required to pay is figured at $16,833. The taxes are levied on the gross earnings of the gas and electric light companies of the State at 1½ per cent. The total amount to be paid by all the public service corporations in the State is $2,713,416, from which it appears that the New York, New Haven & Hartford Railroad Company pays more than one-half of the total.

Northern Indiana Company to Refund $1,906,000 Six Per Cent Dividend Notes of U. G. I.

The Public Service Commission of Indiana, through an order just issued at Indianapolis, has authorized the Northern Indiana Gas & Electric Company to issue $1,906,000 of ten-year 7 per cent notes to refund the present 6 per cent demand notes of the United Gas Improvement Company in the sum of $955,300 and to take care of cash loans bearing 8½ per cent interest made to the Indiana company by the U. G. I. Company. The commission in its order pointed out that the refunding process will save annually interest amounting to $4,720.

The order of the commission stated the evidence presented showed that the Indiana company expended the money derived from the cash loans and notes for making additions and betterments to the property, and to acquire materials and supplies to the aggregate amount of $2,403,000, which has not heretofore been covered by the

issuance of securities authorized by the Indiana commission. A complete list of the properties operated in Indiana by the Northern Indiana Gas & Electric Company includes the gas plants and systems at Fort Wayne, Decatur, Bluffton, Lafayette, Crawfordsville, Peru, Logansport, Wabash, Frankfort, Lebanon, South Bend, Mishawaka, Plymouth, Michigan City, Hammond and smaller points in Lake County. It also operates a water works system at Crawfordsville and a heating plant at Lafayette.

Summary of Peoples Case Before Commission Awaiting Decision

A digest of the voluminous testimony presented during a three months' period before the State Public Utilities Commission in the hearing of the Peoples Gas Light & Coke Company's petition for increased rates is now possible. The lines of testimony reported from time to time in the JOURNAL can now be gathered up. The commission has before it 7,000 pages of testimony on which to make its decision as to whether to grant the Peoples company an increase of 6 per cent in addition to the war-time emergency allowance of 27½ per cent granted last August. That decision is expected some time before July 31, the date on which the present rate of 88 cents per 1,000 cu. ft. expires and the pre-war rate of 70 cents is restored. The hearing was initiated by the commission for the purpose of inquiring into the justice of the company's petition, and the first few days were occupied mainly by the commission's engineer, A. B. S. Little, whose contention was, first, that the company had not removed the causes of complaint lodged against it by the commission, and, second, that the costs of producing gas had decreased since the signing of the armistice. There was little testimony to support Engineer Little's claim, except that of his assistant, Claude E. Reese, who had made some slight study of operating conditions in the company's plant.

Thereafter the company's attorneys, Timothy F. Mullen and Francis L. Daily, offered a large number of witnesses, eminent technicians, gas and fuel experts, and officials of the company, ending with Samuel Insull and Charles A. Munroe, vice-president, whose testimony was to the following effect:

1. That the company would fail within a year if lower rates were ordered.

2. That the costs of fuel, labor and chemicals have either risen or not decreased since the armistice.

3. That the operation of the plants is economical and efficient.

4. That fundamental necessities of the company, such as the production of its own gas, cannot be supplied unless higher rates are granted.

Among the witnesses declaring the operation of the company sound and its reputation in the field of gas manufacture high was George B. Evans, general manager of the Laclede Gas Light Company of St. Louis. Frank J. Hermann, of Morristown, Pa., a fuel expert, substantiated the company's claim that the cost of fuel on long contracts was not diminishing. The company showed by charts that the number of complaints against its service was decreasing rapidly, and offered proof that much of the dissatisfaction was due to labor inefficiency because of the drain the war made upon effective help, and that this difficulty was rapidly disappearing. The estimates of production costs submitted by the company showed that the bare cost of making gas is approximately 80 cents per 1,000 cu. ft. An increase of 6 per cent was formally asked by Attorney Mullen during the hearing, and a request that the commission make a valuation of the company's property was also made. Provision for the erection of a coal-gas plant, which Samuel Insull and his associates declared to be the only solution to the problem of production cost, was emphasized as particularly necessary. The other side of the case, as brought out for the city of Chicago by its gas attorney, Donald R. Richberg, was to the general effect that the company is run inefficiently and gives poor service. The charges of inefficiency ranged all the way from faulty bookkeeping and insufficient meter inspection to poor labor conditions at the plants and purchase of low-grade gas at exorbitant prices. From the facts presented by Attorney Richberg, it is contended that the following conclusions should be reached:

1. That the company would not be forced to ask for an increased gas rate if it were well managed so as to give good service.

2. That the present gas rate of 88 cents is already excessive, and should not be increased to 93½ cents, as the company petitions.

3. That the amount of decrease should be fixed by the commission from the evidence in the record.

Illinois Towns Denied Rate Increase

The application for increased gas rates in towns served by the North Shore Gas Company has been denied by the Illinois Public Utilities Commission. At a recent hearing held at Springfield the decision was made that the present rate schedule is to remain. The towns involved in the decision are Waukegan, North Chicago, Lake Bluff, Libertyville, Area, Lake Forest, Highwood, Highland Park, Deerfield, Glencoe and Winnetka.

Lansing, Mich., Adopts Higher Rate

The Lansing, Mich., council has adopted reports of the special committees recommending an increase in gas rates from 90 cents to $1.10 net per 1,000 cu. ft., and a straight 6-cent fare, with transfers, on the local lines of the Michigan Railway Company. When the Lansing Fuel & Gas Company accepts its increase, a new franchise will be drafted and submitted to the people at a special election for approval. The committee fixed a valuation of the gas company at $1,800,000, upon which the new rate is intended to give a return of 7 per cent for interest, taxes and stockholders, after paying all expenses.

Long Island Citizens Ask Gas Main Extension

Deputy Public Service Commissioner Edward J. Glennon held a hearing on the application of the citizens of Laurelton and Springfield, L. I., for the extension of gas mains to those localities. The Brooklyn Union Gas Company has refused to extend its mains, on the ground that the business to be obtained would not justify the cost. At the hearing it was stated that about 900 residents would use gas if the extension were made.

Commercial Organizations Forming in Illinois to Reach Agreements Equitable to Public, Companies, Investors and Employees

The solution of public utility problems by the business men of Illinois is a growing tendency, and several business organizations throughout the State are undertaking investigations into the problems of public service. The Illinois Committee on Public Utility Information, commenting on the movement, says:

"Realizing that the business life of their communities would be crippled without efficient gas and electric service, transportation and telephone service, and that these services cannot be rendered at a loss by public utility companies, and that capital for permanent investment in the upbuilding of their cities will be driven away by unfair action upon the part of irresponsibles, a number of commercial associations are making exhaustive investigations with a view to reaching agreements equitable both to the public, the companies, the investors and the employees."

One case cited is that of the Commercial Club of Belleville, Ill., which is investigating the traction problem, and the conclusions reached by this body of business men reflect a growing attitude. The declaration in the club's report, that in the matter of fares allowance should be made for a fair return on the investment of stockholders, is accompanied by the urgent appeal that the State and municipal regulation of the city's utilities be such as to serve the interests of the public service company as well as the citizens at large.

Complaint Against Long Island Corporation Dismissed

The New York Public Service Commission, Second District, has dismissed the complaint of the trustees of Sag Harbor against the Long Island Gas Corporation over rates for gas and has fixed maximum prices to be charged for a year from the signing of the Peace Treaty as follows: First 4,000 cu. ft. a month, $2 per 1,000 cu. ft.; over 4,000 cu. ft., $1.80; 5,000,000 cu. ft. or more a year, $1.25; minimum charge, $1 a month.

Indiana Pressing Urgency of Coal Situation Before Its Public

An effort is being made by the press and by various other associations and organizations in the State of Indiana to convince the general public that it should begin laying in its next winter's supply of coal immediately if a serious shortage is to be avoided. Coal operators in the Indiana field have issued statements often in the past few weeks emphasizing the fact that the operation of the mines is at extremely low ebb and that unless increased summer storage of coal, at summer rates, is evident, public utility coal supplies as well as domestic supplies will suffer if the winter should be such as that of two years ago, when suffering resulted in many localities throughout the country. It is reported that the general public is not responding to the stimulus, apparently believing that the coal operators merely are seeking to sell more coal. Further reports are that the mines are idle much of the time and practically no part of the summer surplus deliveries are possible, and it is feared that this will result in a tremendous burden of delivery on the coal industry in the cold weather, with resultant suffering where deliveries cannot be made. Public utility officials throughout the State are watching the developments of the situation very closely, and it is understood that many of them are taking advantage of the slack season to store much coal for the winter. Transportation difficulties, of course, enter into the problem just as they did during the war years. Transportation vehicles now are glutted with unmoving coal, necessitating the shutting down of the mines until further transportation facilities can be released. Newspapers throughout the State are discussing the situation editorially. An Indianapolis paper had the following to say:

"The public should not make the mistake of underestimating the seriousness of the fuel situation simply because the war is ended. The National Coal Association has warned consumers repeatedly that purchases must be made this summer if a shortage is to be avoided next winter. The people cannot realize too soon nor too fully that they are courting disaster by delay. They responded to the call for early buying last year as a patriotic duty and should do so again this season for the same reason.

"The Government estimates the coal needs of the country for the year at 530,000,000 tons. The stock on hand Jan. 1 was 30,000,000, leaving a total of 500,000,000 to be produced. The production from the first of the year to June 14 was only 195,000,000 tons, leaving a total of 305,000,000 to be produced in the remaining twenty-eight weeks of the year, or an average of 10,900,000 a week. The production the first part of the year was only 8,125,000 tons. To meet requirements production must be increased 2,775,000 a week during the rest of the year.

"That is possible only if the consumers will put in their orders and get the coal to moving in larger volume. The coal output has physical limitations that must not be ignored. The public should not have to be reminded that the miners cannot mine nor the railway lines handle next winter's fuel requirements in a few weeks just before cold weather sets in. The task is too great. If anything like such a rush is attempted the result will be congestion, delays and forced suspension of industries in some communities, to say nothing of a fuel famine in many homes.

"The consumer should recognize the logic of the situation and realize that he is not only protecting himself but is performing a patriotic service by putting in his coal now. It is important that industry should be unhampered in time of peace as well as in war. The citizens of the country can protect it against a shutdown next winter and it is up to them to do so by utilizing to capacity at present the country's fuel-producing facilities."

Short-circuit in Conduit Blows Off Manhole Cover

A short-circuit caused a spark in a conduit of the Rochester (N. Y.) Railway & Light Company, and it ignited gas that had accumulated in the conduit at a manhole. The explosion of gas was of sufficient force to lift the cover of the manhole a foot above the pavement, and the report was loud enough to be heard a block away. The hose company was summoned and an inspection was made. No damage was reported.

Boston Consolidated Contract Disapproved

Disapproval of the contract between the Boston Consolidated Gas Company and the New England Fuel & Transportation Company for the purchase of gas by the former from the latter was voted by the commissioners of the Massachusetts Gas and Electric Light Commission. Chairman Alonzo R. Weed dissented from the conclusion that the contract should and would be disapproved, but all three agree that the price of 35 cents named in the contract is less than it would cost the Boston Consolidated Gas Company to manufacture its own gas in a standard plant suitably situated. The reason for the disapproval is that the contracts have been very profitable for a number of years to the New England Fuel & Transportation Company, and now, when it seems, under normal conditions, that the Consolidated Gas Company might profit by the transaction, it is attempted to raise the price beyond what seems to be fair and reasonable to the board.

Indiana Commission to Investigate Service Rendered by Citizens Company

The Public Service Commission of Indiana has announced that it will conduct an investigation of the service rendered by the Citizens Gas Company of Indianapolis in conjunction with its heat-unit investigation, the report of which was recently submitted. This action is taken in response to a petition filed by Milton L. Clawson, an Indianapolis attorney, for some customers of the Citizens Gas Company of that city. The formal action was taken to open the way for the filing of a new petition making specific requests concerning the gas needs of the petitioners, it was explained at the commission's offices. Mr. Clawson, in explaining his petition to the commission, declared that, in addition to the investigation of the service and quality of the gas furnished by the company, the petitioner was asking that a rebate be provided for consumers when gas furnished by the company failed to come up to the number of British thermal units fixed as a standard by the commission. After the explanation by the commission of the results of the recent investigation of the heat-unit problem—which seem to indicate that a quality standard of around 570 units may be determined on—Mr. Clawson said that 570 units would provide a satisfactory standard. He asked that when the gas provided by the Citizens company failed to reach this standard a rebate of an amount to be fixed by the commission should be returned to the consumer.

Commissioner Paul P. Haynes summarized for Mr. Clawson the recent investigations of the heat-unit standards committee, and said that a sliding scale, probably with a fluctuation between 560 and 580 units, would finally be the recommendations as to permanent heat-unit standards. He said that this scale probably would set a monthly average, with reductions to be made when the quality of the gas fell below the average. He pointed out that if the commission should adopt such a scale it could not be enforced against the city of Indianapolis or any other city, but that the municipalities might accept it, with modifications based on local ordinances governing franchise obligations with gas utilities, wherever these franchises had not been surrendered to the utility commission. He also said that in case a scale finally adopted by a municipality were not satisfactory to consumers of gas, an appeal could be taken to the commission under the law in Indiana. Dixon Bynum, assistant city attorney, appeared at the hearing and denied the right of jurisdiction of the commission in the whole Clawson case. He supported his contentions with references to a number of recent legal decisions in California in utility cases. He gave notice that the city would file an exception to the order of the public service commission granting the investigation if it were found to be a violation of jurisdiction.

Mr. Clawson made many complaints concerning gas pressure in certain parts of the territory supplied by the big Indianapolis utility. J. D. Forrest, general manager of the Citizens Gas Company, said poor service should be brought to the attention of the complaint department of the company and that it would be rectified wherever possible. He said that if bad conditions existed they undoubtedly were local in character and that the service throughout the city is very efficient at the present time. It is expected Mr. Clawson will file another petition specifically complaining of the company's operation in localities it supplies when the commission has concluded the investigation approved by the order. Mr. Clawson has been before the commission several times with his petition, and each time the question of jurisdiction as between the city authorities and the commission has arisen. Mr. Clawson contends that the commission now has jurisdiction of the subject matter of the complaint because he is appealing to it after the city has failed to require the company to provide gas and service according to its franchise contract. Commissioner Haynes announced that the commission will postpone action in the Clawson case after the investigation is made until it has taken final action in the matter of the State-wide gas heat-unit standards investigation.

Mississippi Company Asks Relief from Reduction Order of Last January

The Greenfield (Miss.) Gas Light Company recently petitioned the State Gas and Electric Light Commission asking the approval of the board on an increase in rates from $1.70 per 1,000 cu. ft. to $1.80. The board has set July 25 as the date of a hearing upon the matter, and will give all citizens of the town an opportunity to attend. The $1.70 rate has been in operation since last January and was put into effect after the commission had ordered the reduction following a hearing upon a citizens' petition that the rates then charged were inequitable.

Buffalo Company Wants to Increase Capital

The New York Public Service Commission has announced that it will undertake at once an investigation of the books of the Iroquois Natural Gas Company, of Buffalo, N. Y., to ascertain whether that corporation should be allowed to increase its capital stock by an issue of $803,000. The company has applied for permission for this stock issue to cover capital expenditures made from July 14, 1904, to Dec. 31, 1917.

New Gasser in Arkansas Making 4,000,000 Cu. Ft. in Shallow Sand and Shale

What promises to be the greatest well in the history of the gas industry in Arkansas started showing gas in the Clear Creek Oil & Gas Company's No. 21, on the Busmaier farm, a mile north of the Arkansas River in Crawford County. At 2,315 ft. the well is making 4,000,000 cu. ft. of gas, 500,000 of which is coming from a sand found at 1,700 ft. The other 3,500,000 cu. ft. are coming from 40 ft. of shale, the deep pay sand having not yet been reached. This is the first time in the history of the field that shale has made gas. Field men say this indicates there is a tremendous body of gas lower down and that its pressure is so great that it is finding an outlet in the shale, in addition to the sand that is expected to be picked up in the next 50 or 100 ft. The Bushmaier location is a mile and a half from the nearest well.

Four Utility Corporations Confer on Proposed Coke Plant

Representatives of gas-distributing companies in Albany, Troy, Schenectady and Cohoes met in informal discussion with Carl H. Graf, president of the Municipal Gas Company of Albany, for conference touching on the new aspect of the proposed W. J. Rainey coke-manufacturing plant on Breaker Island as affecting the gas supply. Mr. Graf said, following the meeting, that no power to make decision regarding purchase of service from the new plant has been made. It has been assured, however, that near-by cities will patronize the new industry. Utilities corporations represented at the meeting were the Troy Gas Company, the Cohoes Power & Light Corporation, the Schenectady Illuminating Company and the Municipal Gas Company.

New Jersey Company Not Permitted to Sell Equipment

The State Board of Public Utility Commissioners denied the application of the Consolidated Gas Company of New Jersey for approval of equipment sale and to open a "property abandoned account from the proceeds."

City of Springfield, Mass., to Consider Rate Increase

An order has been presented to the City Council for the appointment of a joint committee of two aldermen and three councilmen, to represent the city at the hearing on July 24 on the petition of the Springfield (Mass.) Gas Light Company for permission to revise its rates upward. The order also provides, if the City Council deems it necessary, that the committee may engage the services of an accountant to go over the figures of the gas light company for purposes of comparison. It is not certain that such a step will be necessary, but the order is drawn so as to provide for such a contingency. The purpose of the City Council is not to blindly oppose the proposed increase in rates, but rather to learn if the increase is justified.

Buffalo Company Ordered to Reduce Natural Gas Rate

Chairman Charles B. Hill of the Public Service Commission of New York State has ordered the Peoples Natural Gas Company of Buffalo, N. Y., to reduce its price from 35 and 37 cents per 1,000 cu. ft. to the old rate of 30 and 32 cents, and to make a rebate to its customers. The company had asked to raise its rates to 47 cents. B. F. Dowd, president of the company, stated to Chairman Hill that the company was charging 5 cents per 1,000 cu. ft. more than its franchise allowed, and added that there was no opposition. Mr. Dowd also stated that the company's wells have run dry and that it is unable to supply its customers at the present rate because the cost of production has greatly increased. He said the company has never paid a dividend and that at 47 cents per 1,000 cu. ft. gas is a cheaper fuel than coal.

Indiana Commission Orders War Rates to Continue

The Indiana Public Service Commission has instructed the Richmond Light, Heat & Power Company to maintain the gas rate fixed during the war period, which was to have expired on June 30. The commission ruled that labor, construction and maintenance costs have not decreased since the armistice was signed, and that additional revenue was necessary.

Public Service Company of Northern Illinois Inaugurating Vigorous House Heating Campaign

Inauguration of a vigorous campaign for house-heating installations at Evanston, Ill., has been decided upon by the Public Service Company of North Illinois. Extensive tests to ascertain the relative heating values of gas and other forms of fuel are to be made, and officials of the company are confident the results will be in favor of gas. One of the important parts of the house-heating installations plan will be the equipment of an office building of the company at Evanston entirely for gas heating. Fully 6,000 ft. of radiation will be required in a two-story building about 150 by 200 ft. It is the company's plan to demonstrate to the people of Evanston that gas, while not less expensive than coal, for instance, as a straight-out proposition of measured gas footage per coal tonnage, yet in the long run it is decidedly cheaper, besides much more convenient. In the make-up of the schedule, of course, the cost of help in firing coal furnaces, etc., will be figured. Co-operation on the part of the company in the movement started by the American Gas Association is expected to supply considerable data for the heating committee in its commercial section. Complete records will be kept, and analyses will be made from time to time. It is expected that other companies in this section will follow the example set by the Public Service Company. The next few months may witness vigorous campaigns in most of the cities and towns in the territory contiguous to Chicago.

Public Utility Rates Hold War Record of Being Last of Necessities to Rise

Public utility rates hold the war record of being the very last to rise, when everything else was doubling and tripling, declares a statement just issued by the Illinois Committee on Public Utility Information, representing the Illinois Gas Association and other State public utility organizations. As the result of an investigation into the costs of living and production, the committee publishes some

very striking figures showing the extreme conservatism in utility rates as compared with other prices. In the period since 1896, says the statement, food prices have increased 215 per cent, clothing prices 230 per cent, anthracite coal 857 per cent and taxes 100 per cent.

"Practically the only prices which did not double or triple were those of the public utility industry," says the statement—"electric, transportation, gas and telephone rates—and this despite the tremendously increased improvements and service. Electricity rates show an actual decrease during the period of 70 per cent, this being possible through the fact that development in the industry was at its height and increased operating costs were being met through economies effected through new inventions, centralization of power plants and the use of water power, the rapid growth in volume of the electrical business, and efficient management.

"Over a long period gas rates and street-car fares showed no upward turn, the public being the constant beneficiary of any change. It was only within the last few years, when materials and labor became exceptionally oppressive, that these companies asked for additional rates. Public utility rates hold the war record of being the last of all prices of necessities to rise, following far in the rear of food, clothing, fuel, newspapers and rents, and the proportion of advance is far below that of the others.

"The results of an inquiry made by the committee into the increased costs of bituminous coal, metals, chemicals, lumber and labor covering the period since 1909, all of which figure heavily in production costs of the public utility industry, are summarized as follows:

"Bituminous coal prices increased 38 per cent to 1912; dropped to a 22 per cent increase in 1913; by 1916 showed an increase of 48 per cent; increased to 95 per cent over 1909 prices in 1917, and were 130 per cent greater at the end of 1918.

"Labor increased 5 per cent by 1912; 10 per cent by 1914; showed an increase of 12 per cent in 1916, of 20 per cent at the end of 1917 and of 56 per cent at the end of 1918."

In comparison with these increases those in gas and other utility rates have been merely nominal.

Southern California County Piping Natural Gas to Riverside, Cal.

Natural gas will be supplied to Riverside, Cal., by the Southern California Gas Company early next fall. Pipe for an eight-inch main to run from a point in Los Angeles county to the Colton plant of the Southern California Gas Company has been bought and the work of laying this main will be started at once, according to a statement made by Superintendent Gillespie. Some of the pipe has already been delivered. Operating under the blanket franchise recently granted the Southern California Gas Company in this city and county, it will only be necessary for the company to deliver the natural gas to its plant in Colton and release it in its lines in the section now served by the company. The company will always have a supply of manufactured gas in its tank in Colton for emergency. Natural gas is being used in Ontario, Cal., and it is believed this is the nearest point the line from the Fullerton fields may be reached. This means an eight-inch line of about 20 miles.

THE PACIFIC GAS & ELECTRIC COMPANY'S application for an order authorizing the issue of $3,500,000 of its first preferred 6 per cent stock, to be sold at not less than $85 per share, was granted by Commissioner Frank R. Devlin, of the Railroad Commission, after Vice-President A. F. Hockenbeamer had testified that the company had a definite offer for that amount of stock.

Alanson P. Lathrop Re-Elected President of Milwaukee Company

Alanson P. Lathrop, of New York, was re-elected president of the Milwaukee Gas Light Company at its annual meeting. Other officers re-elected are: Sheldon J. Glass, first vice-president; Nelson P. Hulst, second vice-president; Ewald Haase, secretary-treasurer, and R. B. Brown, general manager. The members of the board of directors re-elected are: A. P. Lathrop and Emerson McMillen, New York; S. J. Glass, E. J. Lindsay, Ewald Haase, F. W. Rogers, N. P. Hulst, A. A. Luedtke and R. B. Brown. Mr. McMillen is chairman of the board.

West Virginia State Geologist Testifies on Natural Gas Situation

In his evidence as a witness in the application for the United Fuel Gas Company for increased rates, Dr. I. C. White, State geologist, made many interesting statements regarding the gas situation in West Virginia. The hearing was before the State Public Service Commission in Charleston. Three-fourths of the supply of gas in the State has been exhausted but the remainder might last twenty years providing it is used for domestic consumption only, according to Dr. White; and he doesn't regard more than 15 per cent of the undepleted acreage in Southern West Virginia as good territory. Nine-tenths of the natural gas is wasted in West Virginia, he states, because of carelessness and absence of burners or defective burners. Wherever there is a light flame, there is poor oxidation, and a good portion escapes in the form of carbon mon-oxide. The average cook wastes a great deal of gas, and uses 8 cu. ft. where two would suffice. An illustration of how they waste the product may be seen when they turn the gas so high that the flames encircle the vessel being heated, with the result that this heat is lost. In discussing the cost of manufacturing gas, the geologist stated, that the cheapest gas ever manufactured was at Wheeling, where it sold for 75 cents per 1,000 cu. ft. In New York, and other cities, manufactured gas costs something like $1.75 or $2 per 1,0000 cu. ft. Furthermore manufactured gas has just about one-half the heat value of natural gas. Dr. White expressed the opinion that natural gas should not be used for industrial purposes, because it is such a perfect domestic fuel, it should not be exhausted for future consumers. He expressed the opinion that the only way was to charge the industrial consumer enough to make it unprofitable.

Dr. White has made a number of valuations of oil and gas properties. He aided in the second geological survey of Pennsylvania. He made a valuation of a big oil concern in Mexico. He has made valuation of the United Fuel properties, both in 1913 and 1918, for the purpose of figuring the government income tax. Also he made a valuation of the holdings of the Ohio Cities Oil Company's holdings in the Cabin Creek district. He estimates the value of the gas and oil holdings of the United Fuel Gas Company at $42,000,000.

(*Continued from page 59.*)

ployee looks at these things. You have always had all the money you could spend, and can't get the employee's point of view. If you are going to try out any system put it in charge of a man who has come up from poverty and the ranks, and whose success has not changed his heart and his head. Good day."

Announcement of New Rate Schedule of Westchester Company

Superintendent Joseph B. Murphy of the Westchester Lighting Company, of Mount Vernon, N. Y., has announced the new rates for gas as asked for in the company's petition to the Public Service Commission, Second District. An increase is asked in the retail price to consumers of 25 cents, from $1.25 per 1,000 cu. ft. to $1.50. Wholesale rate increases, averaging 15 per cent, are petitioned. Under wholesale is included consumers who use more than 100,000 cu. ft. The requested rates follow: From 100,000 to 124,900 cu. ft., $1.25 per 1,000 cu. ft.; from 125,000 to 149,000, $1.20; from 150,000 to 174,900, $1.15; 175,000 to 199,900, $1.10; over 200,000, $1.05.

Atlantic City Company's Properties to Be Sold July 28

A meeting of the bondholders of the Atlantic City (N. J.) Suburban Gas & Fuel Company and the Pleasantville Electric Company has been held to determine the best course to be taken to protect their interests in these properties. The meeting was called because the properties and franchises of the companies are to be sold at public sale on July 28 by Receiver Judge Frank Smathers. The sale is to be made free from all liens and the bondholders are interested to the extent of devising some plan whereby their holdings can be protected. The bonders were represented by Attorney Charles G. Babcock. At the time of the sale, if the bondholders combine to purchase the properties the bonds outstanding, amounting to the sum of $150,000, will be taken at the value of 90 per cent, the remaining 10 per cent being paid in cash. It was said that the companies had defaulted in the interest payments on the bonds for one and a half years.

$1.00 Minimum Rate; 50 Cents Service Charge and 10 Cents Increase Granted Nashville Company

Authority to increase its rates has been granted the Nashville (Tenn.) Gas Company, following its plea to the public utilities commission for relief. The increase granted was as follows: A service charge of 50 cents; a minimum charge for gas of $1; an increase on rate of gas of $1.10 net instead of $1. The commission then figures the company to fall $23,800 short of the income it is reasonably entitled to on the amount of money invested. An appraisal of the property of the company is to be made within the next twelve months by appraisers to be appointed by the railroad commission and to be approved by the chairman of the Interstate Commerce Commission. The commission is to retain control of the case and make other changes if it sees fit to do so. It was represented that the company was paying over $55,000 annually in all taxes and revenues, and the present increase in coal, oil and labor had caused a constantly growing deficit. The raise in rates was named to begin from July 1 and to be terminated at the discretion of the State commission.

The grounds on which the gas company based its request for an increase in the price of gas and the additional service charge were that the cost of producing gas had steadily increased since the year 1913, until its actual loss during the year 1918 was $60,132.04.

Another Rich Oklahoma Gas Strike

A gas well with a capacity of between 9,000,000 and 10,000,000 cu. ft. a day recently was brought in on an 80-acre field 8½ miles northeast of Broken Arrow, Okla., owned in part by Little Rock and Pine Bluff residents, according to H. Tysinger, of Little Rock, representative of the company, who has just returned from the field. Mr. Tysinger said that other wells will be sunk at once. The tract is in a proven field and it is expected several other producing wells will be drilled. Stock immediately "went to the sky" when the discovery of the flow was announced. One Pine Bluff stockholder refused an offer of $12,000 cash for his $250

Louisville Gas and Electric Company Gives Free Fan Service to Invalids

"Calls for free electric fan service from invalids who are unable to afford this hot weather relief are now being received, and we are taking care of them as usual," said Donald McDonald, manager of the Louisville Gas & Electric Company. Physicians tell me that we are doing a great deal of good through this service, which we have been rendering for the past several years. We have had many letters of thanks from both physicians and patients, and, of course, we intend to continue the service."

To obtain this service for needy patients a physician need only telephone the commercial department of the company or write a letter stating that in his opinion the patient is unable to pay for the service.

Ohio Cities Gas Company Extends Operations

Officers of the Ohio Cities Gas Company were gratified with the news that a 1,000-barrel oil well had just been brought in within a thousand feet of the company's G. C. Vaught lease of 123 acres on the Comanche County and Eastland County line in Texas. The company has a comprehensive program outlined in the new fields. Insiders say its West Virginia properties of approximately 140,000 acres are rapidly being proved far in advance of any previous production. In Kansas it is drilling on leases which, it is believed, promise important development. A well is expected to be brought in shortly in New Mexico, where it has about 237,000 acres. The Casinghead gasoline plants, of which the company operates six, are now producing 25,000 gallons of blended product daily, an increase of 8,000 gallons over a year ago.

Lawrenceburg Company Asks Service Charge

The Lawrenceburg (Ind.) Gas Company has petitioned the public service commission for authority to establish a service charge of 50 cents a month for each patron in addition to present rates. The company is now operating at a deficit, the petition says, and the extra charge will eliminate this deficit.